

Rural Economic Development Based on "Internet + Agriculture"

Wei Liu

Department of Finance, Jilin Business and Technology College, Changchun, China

65792132@qq.com

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Abstract: China is a typical agricultural country. With the rapid development of science and technology, China's traditional agriculture has gradually shifted to an intelligent, standardized, and modern "Internet + agriculture" innovation model. However, in this process, there are still links that need improvement, such as backward agricultural marketing concepts and insufficient Internet technology. Therefore, for the healthy development of "Internet + agriculture", many subjects including governments at all levels, agricultural enterprises, scientific research institutes, and Internet platforms have successively conducted research on how to deeply integrate the Internet with modern agriculture. This article starts with an overview of "Internet + Agriculture", discusses the current status of "Internet + Agriculture", puts forward the problems that restrict the development of "Internet + Agriculture", and analyzes the corresponding countermeasures so as to provide useful suggestions for the development of China's Internet plus agriculture and promote the development of modern agriculture in China.

The State Council issued a guidance on July 4, 2015 on the active promotion of the "Internet +" action, pointing out that China should actively take advantage of the comparative advantages and scale advantages of the Internet economy that have been formed, and quickly promote the development of Internet + ", strengthen our technological innovation capabilities in various fields and build new momentum for harmonious economic and social development. Under such a background, the development of "Internet plus agriculture" can speed up the standardization and intellectualization of agricultural products in our country, increase the income of farmers, enhance the technological innovation ability in agricultural fields, upgrade the agricultural industrial chain, improve the ecological environment in the vast rural areas, constantly improve the agricultural supply side reform mechanism, and accelerate the process of modern agriculture in the process of new urbanization.

1. Overview of "Internet + Agriculture"

1.1 The Meaning of "Internet + Agriculture"

"Internet+" is a new form of knowledge economy. The so-called "Internet + agriculture" refers to modern Internet communication technologies and related information technology platforms such as Internet of things, cloud computing, big data, mobile Internet and induction technology. It combines modern Internet technology with traditional agriculture, uses the Internet way of thinking to collect information and materials about agricultural planting, breeding, production, processing, transportation, sales and promotion and other links or processes. After scientific and reasonable processing, we can promote the transformation and upgrading of the whole agricultural industry chain through the effective and intelligent Internet operation platform, which represents the new agricultural development mode of agricultural field development Direction and new situation.

1.2 The Significance of Developing of "Internet + Agriculture"

Traditional agriculture has the characteristics of large market potential, relatively concentrated risk, relatively low industrial chain, information asymmetry, high transaction cost, single marketing model of agricultural products, low price and profit of agricultural products. The new production mode of "Internet + Agriculture" is to combine modern information technology such as Internet,

cloud computing and big data with traditional agricultural production, which can improve agricultural production efficiency, increase agricultural product yield, enhance crop risk resistance, ensure reliable sources of agricultural products, continuously optimize and integrate agricultural production resources, innovate marketing model, broaden the agricultural industry chain, reduce related costs, improve product profit margin, increase information transparency, promote the quality and safety of traditional agriculture to modern cultivation, animal husbandry, forestry, fisheries, agricultural products quality and safety, agricultural Information transformation. At the same time, we can also carry out industrial division of labor, improve the progress of organization, to achieve the traditional agriculture to mechanization, intelligence, modernization, information technology, standardization transformation.

2. The Status Quo of the Development of "Internet + Agriculture"

At present, the ecological environment for the development of "Internet +" is continuously optimized. In agricultural production, Internet technology is becoming more mature, the pace of agricultural modernization is accelerating, and the effect of traditional agricultural transformation is obvious.

In the field of agricultural production, Internet technology and sensor technology are combined to collect real-time information such as light, humidity, and temperature required for crop production, planting, and breeding, and enter this information into an Internet intelligent system for qualitative and quantitative analysis, combining weather, water conservancy, industry and commerce, and other departments to analyze the data to form a relevant model. In addition, Internet technology and rural environment, agricultural resources, agricultural production, agricultural product circulation and other links have been realized to achieve information sharing.

In the field of e-commerce, 756 counties have been supported by e-commerce activities in rural areas by the end of 2017. Rural online retail sales reached 1.25 trillion yuan, and agricultural e-commerce sales exceeded 300 billion yuan, driving more than 28 million people in employment. At present, China mainly has the following "Internet + agriculture" e-commerce models: One is fresh Internet platforms such as Tmall, JD.com, Amazon, Suning.com, etc. These e-commerce platforms have large scale and large number of customers. More and considerable sales, which can achieve direct sales and direct sales of agricultural products from the origin, reduce the intermediate links of buyers and wholesalers, reduce transaction costs, management costs, and increase farmers' income. This model is an Internet platform electronic Direct business model. The second model is based on small and medium-sized Tmall shops, Taobao shops, and micro-businesses. Farmers are both sellers and producers and processors of agricultural products. This model is called the farmer's direct sales model. The last one is that the agriculture-related e-commerce platform is a self-operated mode for farmers to cooperate with or join other merchants.

In terms of infrastructure, basically all rural areas can communicate on the phone and the Internet, and more than 200,000 administrative villages have established beneficial agricultural information service platforms to provide farmers with diversified and fast public welfare services, e-commerce and related training experience, information sharing and other services. It includes four major platforms, including eight major agricultural product big data and related information of 21 provinces, municipalities and autonomous regions and key agricultural product market information, agricultural product quality and safety traceability, agricultural and veterinary medicine basic data, and new agricultural business entity information direct reporting. In addition, e-commerce platforms for agricultural products have been established on ultra-large e-commerce platforms such as Taobao, Tmall, JD.com, and Suning.com, which have truly realized multi-dimensional benefits for governments, farmers, e-commerce, and consumers.

3. "Internet +" Agricultural Development Problems

3.1 Limited Policy Support

The development of China's "Internet + agriculture " is still in its infancy, and all work needs the support of governments and financial institutions at all levels. However, many regional governments are unable to achieve overall coordination and have limited policy and financial support for agriculture, forestry, aquaculture, and water affairs. especially the lack of follow-up financial support for innovations in the Internet and remote sensing technologies. This will affect the scientific and technological changes in the agricultural economy and the introduction of professionals, and hinder the pace of transformation from traditional agriculture to modern agriculture.

3.2 The Production Scale of "Internet + Agriculture " Is Insufficient

Due to its own conditions, agricultural enterprises have low capital, limited scale, low product visibility, and insufficient Internet facilities, which restricts the development and promotion of "Internet + agriculture " technology, and cannot truly achieve regionalization and marketization of agricultural production. The specialization of production technology, the large-scale marketing of agricultural products, and the centralized management of agriculture have increased the difficulty of the industrialization of the production chain of agricultural enterprises, and increased the difficulty of agricultural production-related costs and the supervision of the agricultural product market.

3.3 Lack of Professionals

Farmers are generally less educated, and many farmers' understanding of the Internet is limited to using computers or mobile phones to access the Internet, and the degree of Internet knowledge and technology varies greatly. In some rural areas, the popularity of the Internet is not high, and farmers 'awareness of using the Internet is weak. In the agricultural field the professionals extremely scarce who not only understand Internet-related professional knowledge, but also master agricultural production, remote sensing, product marketing and a series of skills of professionals. From the perspective of talent supply, major universities in China do not reflect the deep integration of the Internet and agriculture in relevant professional settings, talent training, teaching content and other links. Various colleges and universities provide students with few relevant internship practice opportunities, and many places do not emphasis on agricultural-related vocational education, most agricultural-related research institutes research Internet technology to develop modern agriculture has fewer talents. Coupled with the low salary of agricultural jobs, it is impossible to attract high-quality talents.

3.4 Backward Construction of Supporting Facilities

One is that some rural areas have backward Internet infrastructure construction, lack of network resources, Internet access difficulties, slow Internet speeds, and unstable network signals. Some schools cannot even be equipped with enough computers to popularize Internet knowledge. Home computers and mobile phones (especially smartphones) insufficient ownership has resulted in insufficient understanding of " Internet + agriculture " by farmers, and various Internet technologies cannot be implemented. **Second**, most agricultural products are fast-moving consumer goods, which are easily deteriorated and have obvious seasonality, so they have higher requirements for logistics and distribution. The majority of our logistics enterprises do not have the conditions of transport of agricultural products, cold chain link imperfect, small distribution range for remote or inaccessible rural areas, can not provide logistics and distribution services, even if there are logistics and distribution, distribution costs also high. The **third** is that most Internet platforms are consulting platforms, which can only provide farmers with services such as agricultural policies, technical services, and access to information. Agricultural information database construction, expert remote diagnosis and testing, online question answering, information sharing, data analysis, and update functions are insufficient. In addition, many agricultural e-commerce trading platforms have serious homogenization of business models, weak innovation capabilities, high related costs, small scale and low quality of participating agriculture or enterprises, resulting in inefficient operation of Internet platforms. **Fourth**, China's Internet-related regulatory legal system is not perfect, and there are still some blind spots in regulation. Basically, there are no complete rules and regulations

concerning agricultural e-commerce. Some Internet transactions have security risks. In the process of crop planting, breeding and processing, there are also some hidden safety problems that need to be solved urgently. **Finally**, the ecological environment in some rural areas is not optimistic, the aging is serious, and the labor force of young and middle-aged people is drastically reduced, which restricts the development of modern agriculture.

3.5 Insufficient Publicity of Internet Technology

On the one hand, farmers have varying levels of education, and even fewer farmers have received training in agriculture and the Internet, and many farmers are unable to apply Internet technology proficiently. Therefore, in the promotion of Internet technology, staff can only choose to distribute brochures, on-site explanations, and advertisements related to production materials. The promotion methods are backward. Internet technology drills only focus on on-site operations and cannot deal with all problems faced by farmers. In addition, most of the propaganda staff are volunteers and part-time workers. The labor remuneration is not high, the mobility of personnel is relatively high, the management system is imperfect, and some workers are lazy and idle. They cannot answer the problems encountered by farmers correctly or even have no patience to answer them. The construction of related platform websites has stalled, and the information update speed is slow. On the other hand, China lacks a large number of leaders of agricultural enterprises. Agricultural enterprises are unable to achieve the scale effect, their brand awareness is low, and they lack industry competitiveness.

4. Countermeasures to Promote the Development of " Internet + Agriculture "

4.1 Increase Government Policy Support

In the process of economic development, the government's macro-control has a decisive role in taking the overall picture. Government policy guidance and financial support are crucial to various industries and fields, and it is also an important driving force for the sustainable development of " Internet + agriculture". Under the guidance of national policies, government departments at all levels in China should continue to innovate, accelerate the construction of Internet agriculture-related platforms, increase financial support in financial and other aspects, establish relevant regulatory systems, improve information disclosure and risk warning mechanisms, encourage the development of leading enterprises, provide funds for remote sensing technology and increase investment in agricultural research resources.

4.2 Expand the Production Scale of the Enterprise

Reasonably use the Internet platform to increase the transparency of information in the production, processing, sales and other links of agricultural enterprises, reduce unnecessary processes or links from producers to consumer terminals, and increase the output and sales volume of agricultural products of enterprises. On the one hand, the real-time sharing of network resources should be implemented in the agricultural product planting and breeding links, so as to realize the information exchange from agricultural production means to agricultural production tools and agricultural productivity, and at the same time, provide scientific breeding and planting methods for farmers, growers, scientifically prevent natural disasters and pests, and use remote sensing technology to monitor the process of agricultural production in real time, so as to improve agriculture product quality monitoring force, timely collect the latest data in the agricultural production process, and use big data technology for analysis and prediction, optimize all aspects of production, reduce production costs and management costs, and promote the standardization and standardization of agricultural production.

At the same time, the monitoring equipment is connected with computers and mobile phone software in real time to realize the intelligent agricultural production and improve the output of agricultural products. On the other hand, we should accelerate innovation, change the marketing mode, reduce the intermediate links, ensure the smooth marketing of agricultural products, realize

the industrial cluster management of advantageous enterprises, reduce production costs, and encourage and support the development of leading enterprises. Through the Internet platform, improve the corresponding information traceability system of agricultural products, strengthen the production and safety supervision of agricultural products, and constantly increase the sales of agricultural products. The increase in the sales volume of agricultural products will naturally stimulate the accumulation of high-quality resources in the agricultural field. By optimizing the allocation of resources, we will further accelerate the transformation of the production mode of agricultural enterprises, and constantly expand the production scale of enterprises.

4.3 Strengthen the Construction of Talent Team

On the one hand, accelerate the adjustment of talent training programs and professional settings in Chinese colleges and universities, set up corresponding majors, cultivate the composite talents needed by modern agriculture, enhance cooperation and exchanges between universities, scientific research institutes and agricultural enterprises at all levels, increase teaching and research funding, and encourage innovation, establish an effective incentive mechanism, encourage college graduates to enter the countryside, attach importance to agricultural vocational education, and cultivate a large number of practical talents for rural areas. On the other hand, agricultural enterprises should provide more practical opportunities and jobs for college students, cooperate with professional training institutions or Internet platforms, establish talent training bases, add relevant certification exams, and improve the professional skills and professional ethics of practitioners, form an integrated development of " production, learning and research "

4.4 Speed up the Construction of Basic Supporting Facilities

First, governments at all levels should increase financial support, accelerate the construction of rural Internet infrastructure, increase Internet speed, and advance Internet technology, build bridges and repair roads, improve the rural ecological environment, pay attention to the problem of rural aging, and encourage young and middle-aged people in rural areas, especially young people with higher education and certain skills to return to the countryside. The **second** is that relevant departments should improve the laws and regulations system and supervision system as soon as possible, protect the rights and interests of consumers, and strengthen the supervision of food sources and safety in the agricultural market. The **third** is to establish a large network database as soon as possible, fully realize the sharing of data and other resources, be able to trace agricultural product sales and product safety, and pay attention to the daily maintenance of the database, information update and analysis, project consultation, technical support, expert guidance, network supervision and other work. The **fourth** is to highlight the status of logistics companies as a third-party logistics enterprise, professional third-party logistics enterprises or companies, through the Internet technology, big data center to grasp the information about the logistics in the agricultural field, can analyze from a professional point of view, reasonable layout, scientific risk aversion, serve as a medium bridge between the supply and demand sides of the agricultural product market, and formulate legally binding contracts to protect the interests of all agricultural product trading participants, establish a full coverage logistics distribution network as soon as possible, establish intensive rural freight stations or logistics service stations, and establish cold chain logistics distribution centers for important agricultural products. It is worth mentioning that the government should play a general command role when building a cold chain logistics system, focusing on market regulation, increasing financial subsidies, reducing taxes and fees, speeding up infrastructure construction. Combined with the overall layout of the agricultural product market, the main network planning of cold chain logistics should be well done. Large, medium and small cold storages should be reasonably distributed. Large or super large cold storages should be established in key areas to reduce the cost of cold chain logistics.

4.5 Increase Publicity

The **first** is to strengthen the training of farmers, improve the comprehensive quality of farmers, and improve farmers' ability to recognize and operate new things, vigorously develop characteristic

agriculture, green agriculture, ecological agriculture, tourism agriculture, etc., pay attention to deep processing of products, and optimize brand effect. The **second** is to step up publicity efforts. Internet technicians, agricultural experts, and enterprise representatives walked into rural areas to conduct publicity sessions, organized various symposia, and experience exchange meetings, in TV, newspapers, WeChat, Douyin, Kuaishou and other media to carry out propaganda, design various and easy-to-understand brochures, lead villagers into advanced enterprises to visit, and communicate with experts and technical personnel at zero distance. The **third** is to build a leading enterprise, strengthen the brand effect of agricultural enterprises, increase the added value of agricultural market products, build a modern agricultural enterprise cluster, expand the scale of the enterprise, reduce the production cost, sales cost, supervision cost, innovation cost and talent training cost of the agricultural market, improve the core competitiveness of agricultural enterprises.

Conclusion

China is a large traditional agricultural country, and agriculture is the key and foundation for the development of the national economy. After China's macroeconomic development has basically entered the new normal, there has been insufficient economic growth momentum. The development of traditional agriculture needs to break stereotypes, innovate development ideas and methods, and continuously promote the development of modern agriculture. "Internet + agriculture" model can accelerate the application of mature Internet information technology in modern agriculture, increase the output of agricultural products, ensure the quality and safety of agricultural products, promote the transformation of traditional agriculture to modern agriculture, increase agricultural productivity, reduce related costs, improve the management of agricultural product sales level, and form an intelligent, specialized and ecological modern agricultural development model.

At the same time, it also can increase government support and guidance, financial support, coordinate the overall situation, change ideas, accelerate the deepening reform of Internet finance, strengthen the integration of Internet technology with agricultural insurance and agricultural credit, develop inclusive finance in the agricultural sector, and increase financial support. In the field of international agricultural production, we will strengthen cooperation and exchange with powerful agricultural countries in agricultural production, information management, development concepts and related technologies, learn from successful experiences, develop strengths and avoid weaknesses, and accelerate the realization of agricultural informatization, modernization, standardization, and intelligence.

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